

## **DRAWINGS**

Attached please find formal replacement FIGS. 5, 9 and 11 for the originally-submitted FIGS. 5, 9 and 11. The new formal replacement figures add no new matter.

## **REMARKS**

Claims 1-20 are pending in this application, with claims 1-6 withdrawn from consideration. Attached hereto is a complete listing of all claims in the application, with their current status listed parenthetically. By this Response, no claims have been amended, cancelled or withdrawn.

### **Drawings**

In the Response to Arguments section of the Final Office Action, the Examiner maintains his objection to the drawings. Even though the terms "pseudo-random method," "spectral line" and "pseudo-random timing sequence" are discussed in detail in the originally-filed specification, (for example, starting on page 26, line 5 to page 27, line 6) and the term "time bins" is also discussed in detail in the originally-filed specification (for example, on page 14, lines 12-22), and more importantly, upon reading the specification, one skilled in the art would understand the terms "pseudo-random method," "spectral line," "pseudo-random timing sequence," and "time bins," Applicant has amended FIGS. 5, 9 and 11 to illustrate these terms.

In an effort to establish a non-ambiguous prosecution history, the amended figures will now be explained. FIG. 5 illustrates a spectral line, which may form as explained on page 26, line 5 to page 27, line 6 of the originally-filed specification. FIG. 9 illustrates the pseudo-random method that may be comprised of at least one pseudo-random timing sequence, as also described on page 26, line 5 to page 27, line 6 of the originally-filed specification. And FIG. 11 illustrates that each of synchronization sequences S0-S19 may be comprised of one or more time bins.

It is noted that 37 C.F.R. § 1.83(a) explicitly permits features to be depicted as a rectangular box, so long as the invention can be understood. In this case the terms "pseudo-random method," "spectral line" and "pseudo-random timing sequence" are discussed in detail in

the originally-filed specification, for example, starting on page 26, line 5 to page 27, line 6. The term "time bins" is discussed in detail in the originally-filed specification, for example, on page 14, lines 12-22. Upon reading the specification, one skilled in the art would understand the terms "pseudo-random method," "spectral line," "pseudo-random timing sequence," and "time bins" as they are clearly disclosed in the originally-filed specification.

Applicant respectfully requests that the Examiner approve these drawing amendments to facilitate the allowance of this application.

### **Rejection Under 35 U.S.C. § 103(a)**

In the Response to Arguments section of the Final Office Action, the Examiner maintains his rejection of claims 7-20 over U.S. published patent application 2003/0189975 ("Fullerton") in view of U.S. patent 5,535,239 ("Padovani"). Applicant again respectfully traverses this rejection.

In response to Applicant's arguments that there is no motivation to combine these references, the Examiner cites Padovani et al., col. 2, lines 45-48 for supplying the necessary motivation. Col. 2, lines 43-48 of Padovani reads as follows:

"The present invention is a novel and improved method and system for the communication of frames of data in a manner which reduces within transmission data frames of various users the occurrence of unnecessary instances of contemporaneous transmission of data so as to reduce systemwide traffic loading in data transmission."

Nowhere in this cited section is there any teaching or suggestion of why (or how) one skilled in the art would be motivated to combine ultra-wideband communication technology (as taught in Fullerton) and conventional carrier wave communication technology (as taught in Padovani).

In addition to the fact that the two communication technologies are completely different, and thus completely un-combineable, as discussed in Applicant's November 18, 2005 Response, Applicant also notes that neither of the cited references, either alone or in combination, teach or suggest all of the claim elements found in independent claims 7, 16 and 17, as required by M.P.E.P. § 2142.

Specifically, both claims 7 and 16 recite, in part, ". . . transmitting both the first and second data frames in a pseudo-random method."

As admitted by the Examiner, Fullerton is completely silent as to any teaching or suggestion of this claim element. The Examiner cites Padovani, FIG. 1 and col. 16, lines 50-63 and col. 34, lines 43-55 for teaching or suggesting this claim element. However, FIG. 1 simply teaches a transmitter, and col. 16, lines 50-63 teaches "data burst randomizer logic 46" that inserts data *within* each frame. FIGS. 10a-10d are referred to, which are described as "a series of diagrams illustrating data positioning *within the frames* for the various data rates." However, each frame has a fixed time duration, and is not transmitted pseudo-randomly. "The present invention is thus a method and system, for use in a communication system in which data is transmitted *in data frames of a predetermined time duration*. . . A computation circuit computes according to a deterministic code a pseudorandom position for the data *within each data frame*" (col. 2, lines 62-67 and col. 3, line 1). Col. 16, lines 50-63 simply claims this teaching.

Thus, Padovani teaches pseudorandom positioning of data *within each data frame*, but *not* pseudorandom transmission of data frames.

Regarding independent claim 17, which recites:

An ultra-wideband communication device, comprising:  
a transceiver structured to communicate at a first data rate; and  
a transmitter structured to transmit at a second data rate that is greater than the first data rate.

The Examiner asserts that Fullerton teaches all of these claim elements. However, Fullerton only teaches an "impulse radio transceiver" and an "impulse radio receiver" that communicate using "pulse interleaved communications" (Abstract). However, nowhere within Fullerton is there any teaching or suggestion of a single device that includes a transceiver structured to communicate at a first data rate and a transmitter structured to transmit at a second data rate that is greater than the first data rate.

In addition to the above discussion that neither of the cited references, either alone or in combination, teach or suggest all of the claim elements found in independent claims 7, 16 and 17, Applicant maintains his position that Fullerton and Padovani teach two completely different communication technologies which are un-combineable, as discussed in Applicant's November 18, 2005 Response.

"To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all the factual information, the examiner must then make a determination whether the claimed invention "**as a whole**" would have been obvious at that time." M.P.E.P. § 2142 [emphasis added]

"A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir 1983), and M.P.E.P. 2100-132 (Eighth Ed., Rev. 3, August 2005) [*emphasis added*]

Certainly a person of ordinary skill in the art, reviewing the teachings of Fullerton, would not have been motivated to modify Fullerton to use conventional communication technology as taught in Padovani. This is because Fullerton teaches a very specific communication technique

tailored to ultra-wideband communication technology (*i.e.*, "pulse interleaving"). *Pulse interleaving is impossible to implement in conventional communication technology* (as employed by Padovani).

Or, vice-versa, Padovani teaches positioning of data within data frames for conventional cellular communication. Certainly a person of ordinary skill in the art, reviewing the teachings of Padovani, would not have been motivated to modify Padovani to use ultra-wideband communication technology, as conventional cellular communications cannot use ultra-wideband technology.

In view of the above discussion, Applicant respectfully submits that the Section 103 rejection of claims 7-20 has been traversed.

#### **Conclusion**


Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, favorable reconsideration and allowance of claims 7-20 at an early date is solicited. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

May 4, 2006

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Date



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